

- 111 -

Abstract of the Disclosure

An encoding apparatus includes an encoder for encoding an alpha-map signal for discriminating a background from an object of an input picture in motion compensation prediction (MV) + transform encoding which  
5 uses MV in a domain of each of  $N \times N$  transform coefficients ( $n$ ), a transform circuit for transforming  $P_f$  into  $\underline{n}$  in accordance with the alpha-map signal, an inverse transform circuit for reconstructing  $P_f$  by  
10 inversely transforming  $\underline{n}$  in accordance with the alpha-map signal, a selector for obtaining a motion compensation prediction value ( $p$ ) in the  $m$ th layer ( $m = 2$  to  $M$ ) by switching  $\underline{p}$  in the  $m$ th layer and  $\underline{p}$  in the  $(m-1)$ th layer for each  $\underline{n}$ , the selector selecting  $\underline{p}$   
15 in the  $m$ th layer for  $\underline{n}$  by which a quantized output ( $Q$ ) in the  $(m-1)$ th layer is 0 and selecting  $\underline{p}$  in the  $(m-1)$ th layer for  $\underline{n}$  by which  $Q = 1$  or more, an adder for calculating a difference  $df$  between a prediction error signal in the  $m$ th layer and a dequantized output in the  
20  $(m-1)$ th layer, and an encoder for encoding and outputting the quantized signal of  $df$ . This encoding apparatus realizes SNR scalability in  $M$  layers.